

COCOLALLA BIBLE CAMP (PWS #1090019) SOURCE WATER ASSESSMENT REPORT

August 17, 2001



State of Idaho Department of Environmental Quality

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Under the Federal Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. The Idaho Department of Environmental Quality (DEQ) is completing the assessments for all Idaho public drinking water systems. The assessment for your particular drinking water source is based on a land use inventory within a 1,000 foot radius of your drinking water source, sensitivity factors associated with the source, and characteristics associated with either your aquifer or watershed in which you live.

This report, *Source Water Assessment for Cocolalla Bible Camp (PWS #1090019) located in Bonner County, Idaho*, describes the public drinking water system, the associated potential contaminant sources located within a 1,000 foot boundary around the drinking water source, and the susceptibility (risk) that may be associated with any associated potential contaminants. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this system. **The results should not be used as an absolute measure of risk and are not intended to undermine the confidence in your water system.**

The Cocolalla Bible Camp drinking water system consists of one well, titled Well 4. The well was drilled in 1998. The water system samples quarterly for total coliform bacteria. There have been no positive samples collected from this well. The water system samples annually for nitrate, which has consistently been below the maximum contaminant level. The water system is currently not experiencing water quality issues.

The well was assigned a high system construction score. It was drilled to a depth of 114' in an area consisting mostly of sand. The well uses a 6' casing that is .250" thick. The Idaho Department of Water Resources (IDWR) *Well Construction Standards Rules (1993)* require all public water systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works (1997)* during construction. Various aspects of the standards can be assessed from well logs. Table 1 of the *Recommended Standards for Water Works (1997)* states that 6-inch steel casing requires a thickness of 0.280 inches. The well is sealed with bentonite to a depth of 30' and maintained appropriately. The well is located within the 100-year flood plain near Cocolalla Lake and is possibly under the direct influence of surface water. Further evaluation is pending.

The well's hydrologic sensitivity score is high. The well is relatively shallow and located in an area of well-drained soils that lack an aquitard to prevent the vertical transport of contaminants.

There are a total of four potential contaminant sites located within the well's source water assessment area. The first site is Cocolalla Lake, which might become a source of microbial contamination. The second and third sites are septic drain fields, and the fourth site is a septic tank.

All three may contribute microbial contaminants or nitrates to the well. Therefore, the well was assigned moderate potential contaminant/land use scores in all chemical categories.

The well's overall susceptibility to contamination has been determined to be moderate in the volatile organic and synthetic organic chemical categories and high in the inorganic chemical and microbial categories. A copy of the susceptibility analysis for your system along with a map showing any potential contaminant sources is included with this summary. Information regarding the potential contaminants within the 1,000-foot boundary have been summarized and included in Table 1.

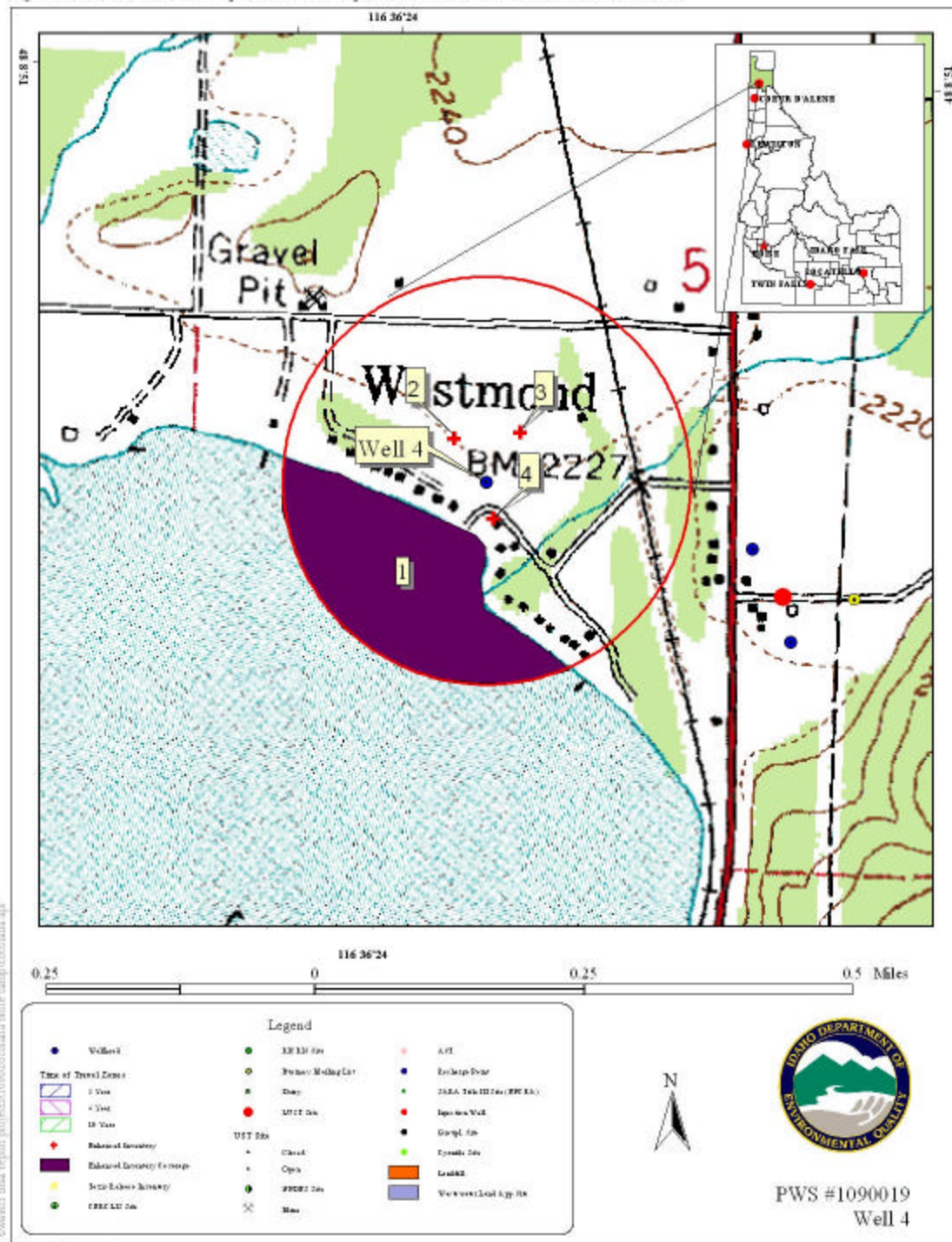
Table 1.

SITE #	Source Description ¹	Source of Information	Potential Contaminants ²
1	Surface Water	Enhanced Inventory	Microbial
2	Septic Drainfield	Enhanced Inventory	IOC, Microbial
3	Septic Drainfield	Enhanced Inventory	IOC, Microbial
4	Septic Tank	Enhanced Inventory	IOC, Microbial

¹UST = underground storage tank

²IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

Figure 1. Cocolalla Bible Camp Delineation Map and Potential Contaminant Source Locations



This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

Cocolalla Bible Camp should focus source water protection activities on implementation of practices aimed at maintaining current water quality despite the presence of multiple potential sources of bacterial and inorganic chemical contamination within the well’s source water assessment area. It will be important for the water system to ensure that proper septic system maintenance procedures are being followed in regards to the two septic drain fields and septic tank located near the well. Information regarding this can be obtained from Panhandle Health District 1. The water system should also pursue further evaluation of the well to determine if it is under the direct influence of surface water so that appropriate actions can be taken regarding water treatment. The well can be further protected by building a locked well house over the wellhead and fencing the well’s sanitary setback of 50’. No hazardous chemicals should be stored near the well or within the well’s sanitary setback distance. The system should develop a source water protection plan that outlines the measures that will be taken to protect the well. The plan should include a contingency component that describes emergency response activities and identifies an alternative source of water should the well become contaminated. Source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term.

For assistance in developing source water protection strategies please Alan Miller at the Coeur d’Alene regional IDEQ office at (208) 769-1422.

DEQ website:

<http://www.deq.state.id.us>

Attachment A

Cocolalla Bible Camp Susceptibility Analysis Worksheet

1. System Construction		SCORE			
Drill Date	12/01/1998				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1999			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	NO	2			
Highest production 100 feet below static water level	NO	1			
Well located outside the 100 year flood plain	NO	1			
Total System Construction Score		5			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		6			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	3	0	0	4
(Score = # Sources X 2) 8 Points Maximum		6	0	0	8
Sources of Class II or III leachable contaminants or	YES	3	0	0	
4 Points Maximum		3	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B Less Than 25% Agricultural Land		0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		9	0	0	8
Cumulative Potential Contaminant / Land Use Score		9	0	0	8
4. Final Susceptibility Source Score		13	11	11	14
5. Final Well Ranking		High	Moderate	Moderate	High

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.27)
- 2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.375)

Ground Water Final Susceptibility Scoring

0-5 = Low Susceptibility

6-12 = Moderate Susceptibility

> 13 = High Susceptibility

POTENTIAL CONTAMINANT INVENTORY LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as **Superfund**, is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.